



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/623,373	08/30/2000	Bjorn Heed		2764
7590	10/14/2004		EXAMINER	
Orum & Roth 53 West Jackson Boulevard Chicago, IL 60604-3606			TRAN, HIEN THI	
			ART UNIT	PAPER NUMBER
			1764	

DATE MAILED: 10/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/623,373	HEED, BJORN	
	Examiner Hien Tran	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 05 August 2004.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-8 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-8 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                     | Paper No(s)/Mail Date. _____ .  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____ .                                  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1-8 are objected to because of the following informalities:

In claim 1, line 6 --that-- or --which-- should be inserted before "is".

In claim 2, line 2 a comma should be inserted after "matrix"; in lines 2-3 "is heated" should be deleted and --in a regenerative-- should be inserted before "to".

In claim 6, line 2 --further comprising-- should be inserted before "a".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, it is unclear as to what structural limitation applicant is attempting to recite, in line 5 it is unclear as to what defines the three zones and where they are disclosed in the specification; in lines 6-8 it is unclear as to where it is disclosed in the specification; in line 8 "the reduction temperature" has no clear antecedent basis. See claim 2 likewise.

In claim 3 it is unclear as to where the means for the supply is shown in the drawings. See claim 6 likewise.

In claim 4, the language of the claim is directed to method limitation/intended use which renders the claim vague and indefinite as it is unclear as to what structural limitation applicant is attempting to recite. See claims 5, 7-8 likewise.

Also in claim 5, line 4 it is unclear as to whether the zone is the same as to the catalytic zone set forth in claim 1, line 5. See claim 8 likewise.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Gribbon (5,589,142).

With respect to claim 1, Gribbon discloses an apparatus comprising: regenerative bed 10 containing heat exchanging matrix, the bed comprising at least three zones, at least one zone is a catalyst zone 22, 24 being catalytically active in reduction of nitrogen oxides, at least one zone is a hot zone (at the burner 28), the catalytic zone 22, 24 being spaced a distance from the hot zone 28 (Figs. 1-2).

With respect to claim 3, Gribbon discloses a means 56, 60, 110 for supplying reducing agents to the incoming gas flow.

With respect to claims 4-5, since the claims are not structurally further limiting, the apparatus of Gribbon structurally meet the instant claims.

Instant claims 1, 3-5 structurally read on the apparatus of Gribbon.

Art Unit: 1764

6. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Bayer et al (5,262,131).

With respect to claim 1, Bayer et al discloses an apparatus comprising: regenerative bed 18 containing heat exchanging matrix, the bed comprising at least three zones 32, 34, 36, 38, 40, at least one zone is a catalyst zone 36, 38 being catalytically active in reduction of nitrogen oxides (col. 3, lines 1-3), at least one zone is a hot zone (at the heating coil 42), the catalytic zone 36, 38 being spaced a distance from the hot zone 42.

With respect to claim 2, Bayer et al discloses that the hot zone is a center zone and the two catalyst zones 36, 38 located on each side of the hot center zone.

Instant claims 1-2 structurally read on the apparatus of Bayer et al.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1764

9. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gribbon (5,589,142) in view of Bayer et al (5,262,131).

With respect to claims 1-2, the apparatus of Gribbon is substantially the same as that of the instant claims, but is silent as to whether the matrix may comprise at least three zones in which the catalyst zone is spaced a distance from a hot central zone.

However, Bayer et al discloses the conventionality of providing a heat exchanging matrix including two catalyst zones located on each side of and spaced a distance from the hot central zone 40 (zone containing heating coil 42) of the matrix.

It would have been obvious to one having ordinary skill in the art to alternatively select an appropriate bed for the system, such as the one taught by Bayer et al in the apparatus of Gribbon, since both types of regenerative bed are conventional in the art and no cause for patentability here.

With respect to claims 3, 6, Gribbon discloses a means 56, 60, 110 for supplying reducing agents to the incoming gas flow.

With respect to claims 4-5, 7-8, since it is unclear as to what structural limitation applicant is attempting to recite as set forth above and apparently the claims are not structurally further limiting, the apparatus of Gribbon structurally meet the instant claims.

#### *Response to Arguments*

10. Applicant's arguments filed 8/5/04 have been fully considered but they are not persuasive.

Applicant argues that in Gribbon, the catalyst beds are located next to the heating zone. Such contention is not persuasive as it is unclear as to which defines the zones as set forth above.

Art Unit: 1764

It appears that the location where the burner 28 is located can be considered the hot zone. The catalyst beds 22, 24 are spaced a distance from where the burner 28 (Figs. 1-2) is located and therefore meet the instant claims.

*Conclusion*

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Houston is cited for showing state of the art.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (571) 272-1454. The examiner can normally be reached on Tuesday-Friday from 7:30AM-6:00PM.

Art Unit: 1764

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Calderola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Hien Tran*

**Hien Tran**  
**Primary Examiner**  
**Art Unit 1764**

HT  
October 6, 2004